

#### TAR SPOT OF LEUCOTHOE

N. E. El-Gholl<sup>1</sup>, J. W. Kimbrough<sup>2</sup>, and T. S. Schubert<sup>1</sup>

The genus *Leucothoe* consists of approximately 50 species of deciduous or evergreen shrubs. These shrubs are widely distributed in eastern Asia, Madagascar, North and South America. They require protection from the cold in northern climates and thrive well in container culture in moist soil composed of peat and sand (3).

*Leucothoe populifolia* (Lam.) Dippel [= *L. acuminata* (Ait.) D. Don and *L. walteri* (Willd.) Melvin (2)] occurs as an evergreen shrub to 12 ft (4 meters) tall (3,4) and is native to Florida.

Of the disease causing microorganisms affecting *L. populifolia*, *Placuntium andromedae* (Pers. ex Fr.) v. Höhn [= *Rhytisma andromedae* (Pers.) ex Fr. (1)] is of moderate importance as a foliar spotting fungus. However, severe leaf infections of *L. populifolia* with this tar spot fungus may render nursery-grown plants unsalable and may reduce plant vigor by impairment of the photosynthetic process.

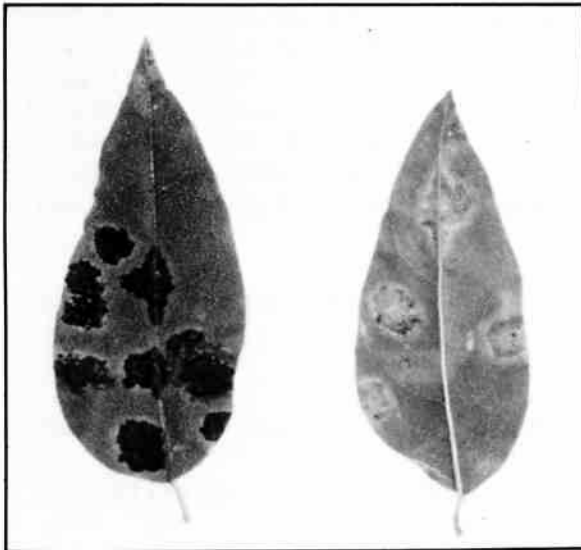


Fig. 1. Tar spot disease on upper (left) and lower (right) surfaces of leaves. (DPI Photo #702730-B-6)

**SYMPTOMS AND SIGNS.** Tar spot diseases are so named because of prominent tar-like black fungal structures called stromata. Stromata are actually protective coverings that surround the fruiting bodies of the fungus. The spots measure 4-15 mm across and are irregularly shaped (Fig. 1). A stroma forms gradually on the upper leaf surface with a slightly raised black patch eventually covering the entire center of the spot. The spot is surrounded by a narrow 1-2 mm wide yellow halo. Little or no stroma is detectable on the lower side of the lesion which appears necrotic with the same narrow yellow margin as on the upper side of the leaf. Spots can coalesce.

---

<sup>1</sup>Plant Pathologists, Bureau of Plant Pathology, P. O. Box 1269, Gainesville, FL 32602.

<sup>2</sup>Professor of Botany, Department of Botany, University of Florida, Gainesville, FL 32611.

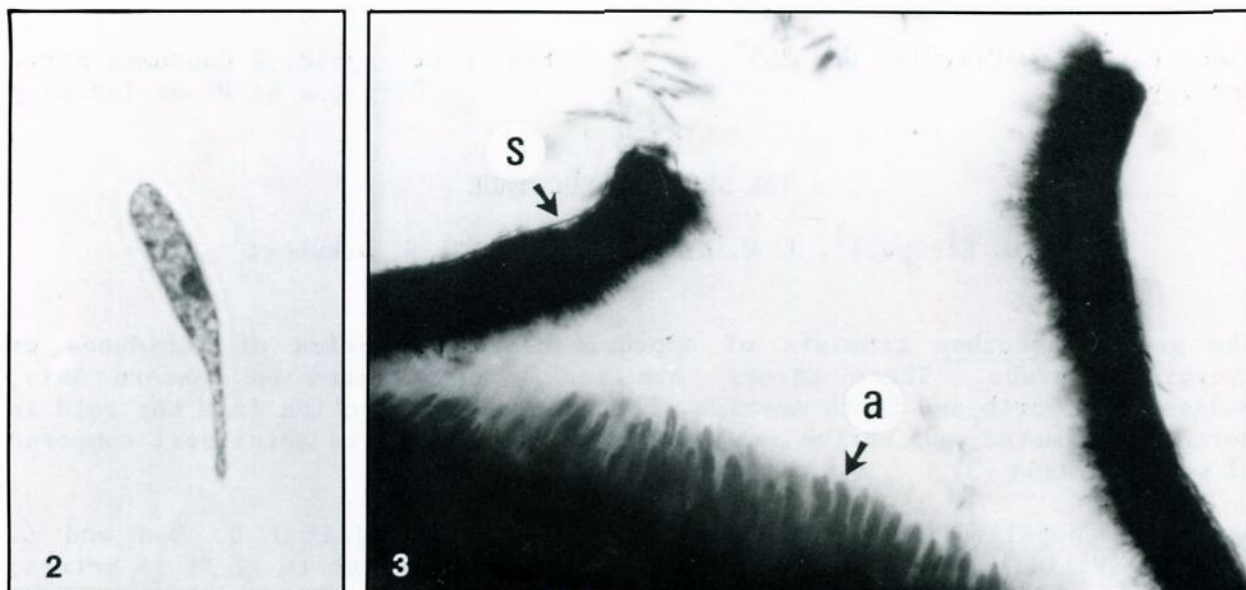


Fig. 2. Clavate ascospore. X 1,155. (DPI Photo #702853). Fig. 3. Cross section through the fissured stroma (s) enclosing asci (a). X 116. (DPI Photo #702888-4)

*Placuntium andromedae* is an ascomycetous fungus which forms fruiting structures (apothecia) within the black stroma. Asci contain eight clavate ascospores (5) (Fig. 2) which measure (27.7- ) 38.2 (-47.8)  $\mu\text{m}$  long by (4.0- ) 5.1 (-5.9)  $\mu\text{m}$  wide. A gelatinous sheath is conspicuous when ascospores from fresh material are observed in a water mount. The apothecia become exposed by fissures (Fig. 3) in the crust and ascospores are distributed by wind currents. The apothecia and contents probably mature in old overwintering leaves, although the life cycle of the pathogen in mild Florida winters has not been studied. Greatest spore release would be expected during wet weather in the spring months.

**SURVEY AND DETECTION.** The appearance of coal-black leaf spots is evidence of this disease.

#### LITERATURE CITED.

1. DARKER, G. D. 1967. A revision of the genera of the Hypodermataceae. *Can. J. Bot.* 45:1399-1445.
2. KARTESZ, J. T., and R. KARTESZ. 1980. A synonymized checklist of the vascular flora of the United States, Canada, and Greenland. Vol. II. The biota of North America. Univ. North Carolina Press, Chapel Hill, NC. 498 pp.
3. LIBERTY HYDE BAILEY HORTORIUM STAFF. 1978. *Hortus third*. Macmillan Publishing Co., Inc., New York. 1290 pp.
4. RADFORD, A. E., H. E. AHLES, and C. R. BELL. 1974. *Manual of the vascular flora of the Carolinas*. Univ. North Carolina Press, Chapel Hill, NC. 1183 pp.
5. TERRIER, C. A. 1942. Essai sur la systématique des Phacidiaceae (Fr.) sensu Nannfeldt (1932). *Beitr. Kryptogamenfl. Schweiz.* 9(2):1-99.